

# Isolation of bioactive compounds from hemp (*Cannabis sativa* L.) by conventional and novel extraction techniques

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## Introduction

Industrial hemp (*Cannabis sativa* L.) is one of the oldest medicinal plants that is a source of valuable bioactive compounds (fiber, protein, oil, cannabinoids, polyphenols etc.). Due to the uniqueness of its composition, hemp is used as a highly valuable product in the food, pharmaceutical and cosmetic industries. The nutritious and bioactive composition of hemp contributes to the prevention and treatment of some diseases, so it can be used in medicine as: analgesic, antiepileptic, anticonvulsant, anti-neurodegenerative, antibacterial and anticancer agent.

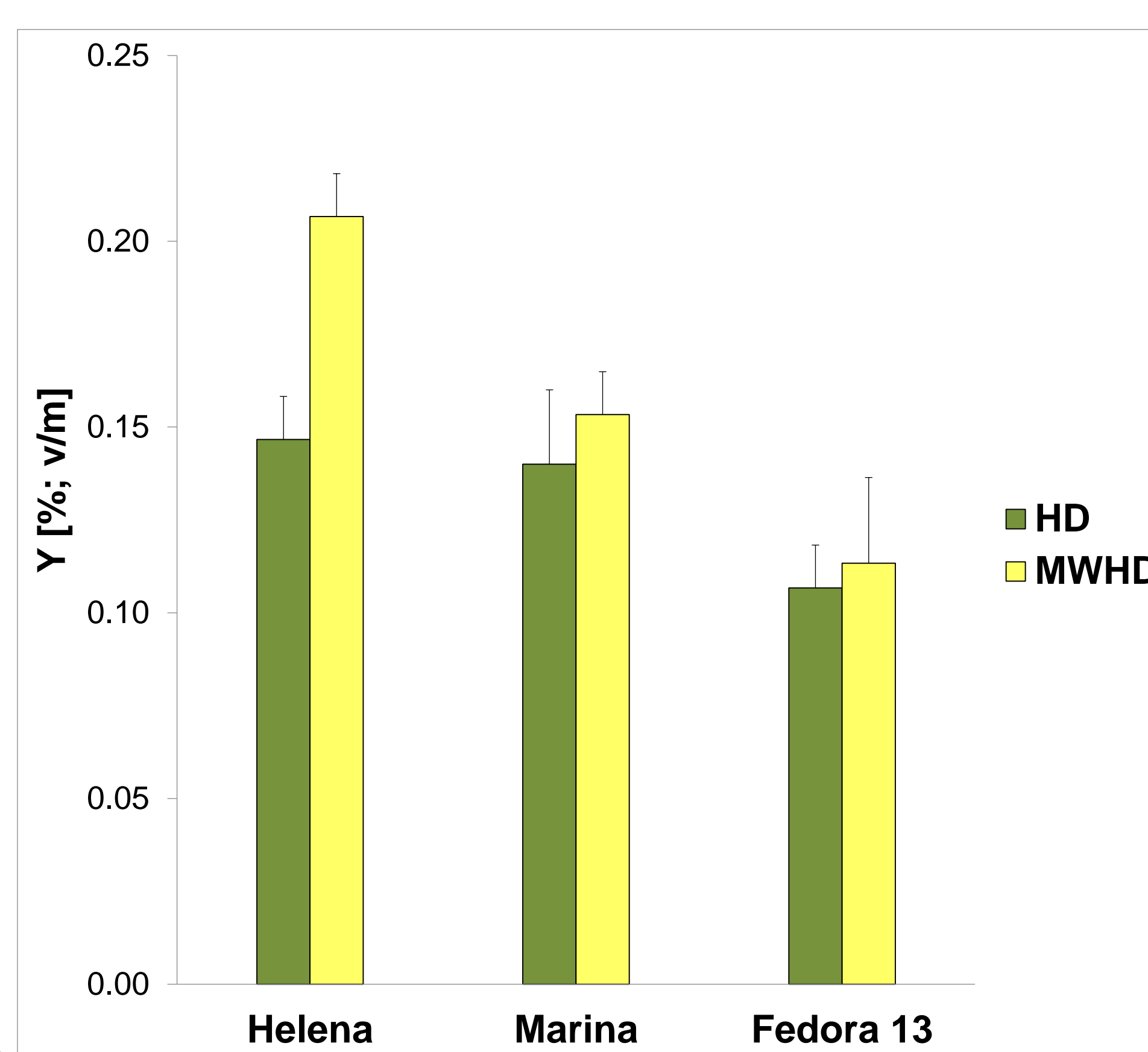
## Experimental part

Dried hemp inflorescence from three varieties: Helena, Marina and Fedora 13

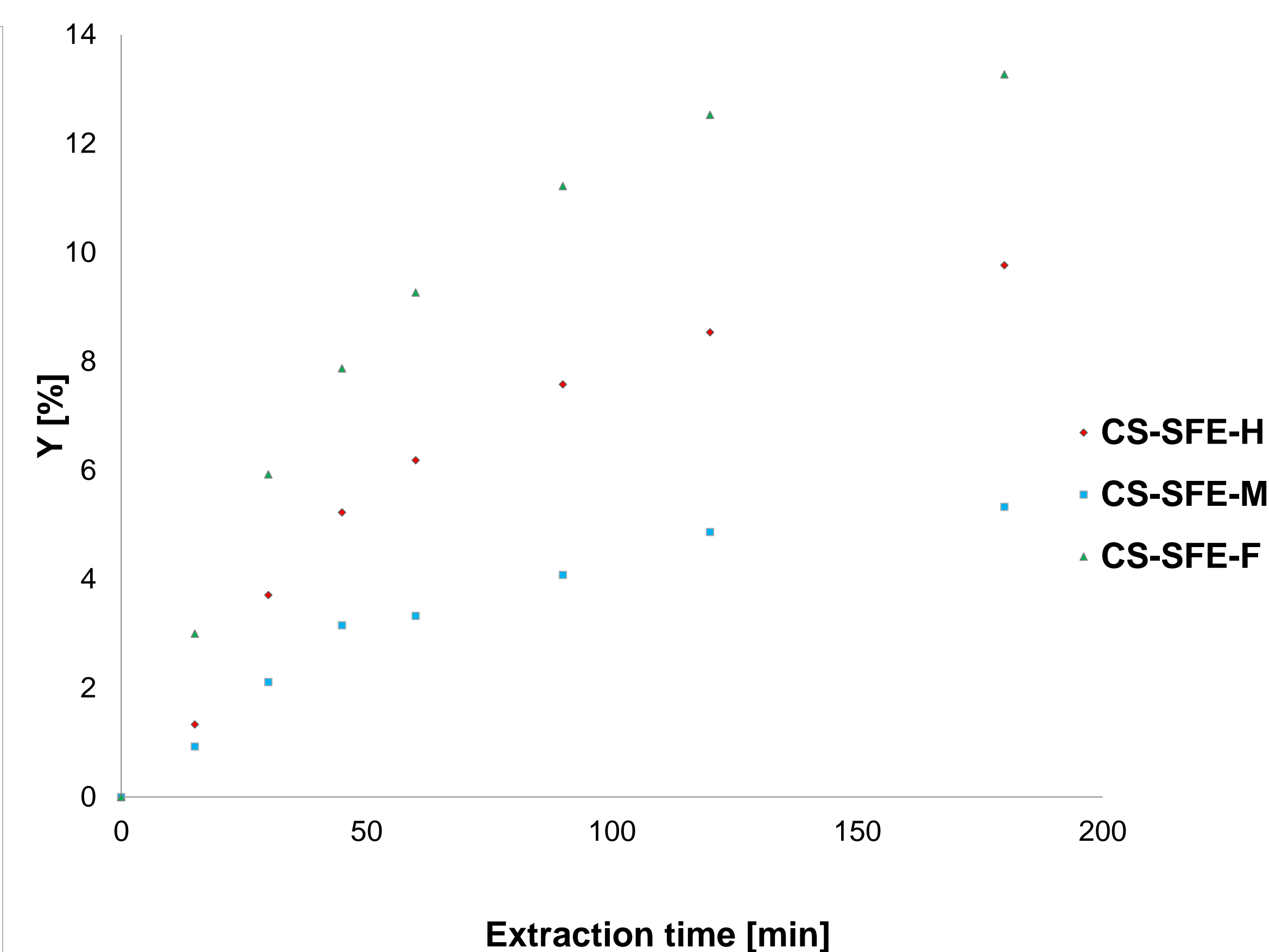


## Results

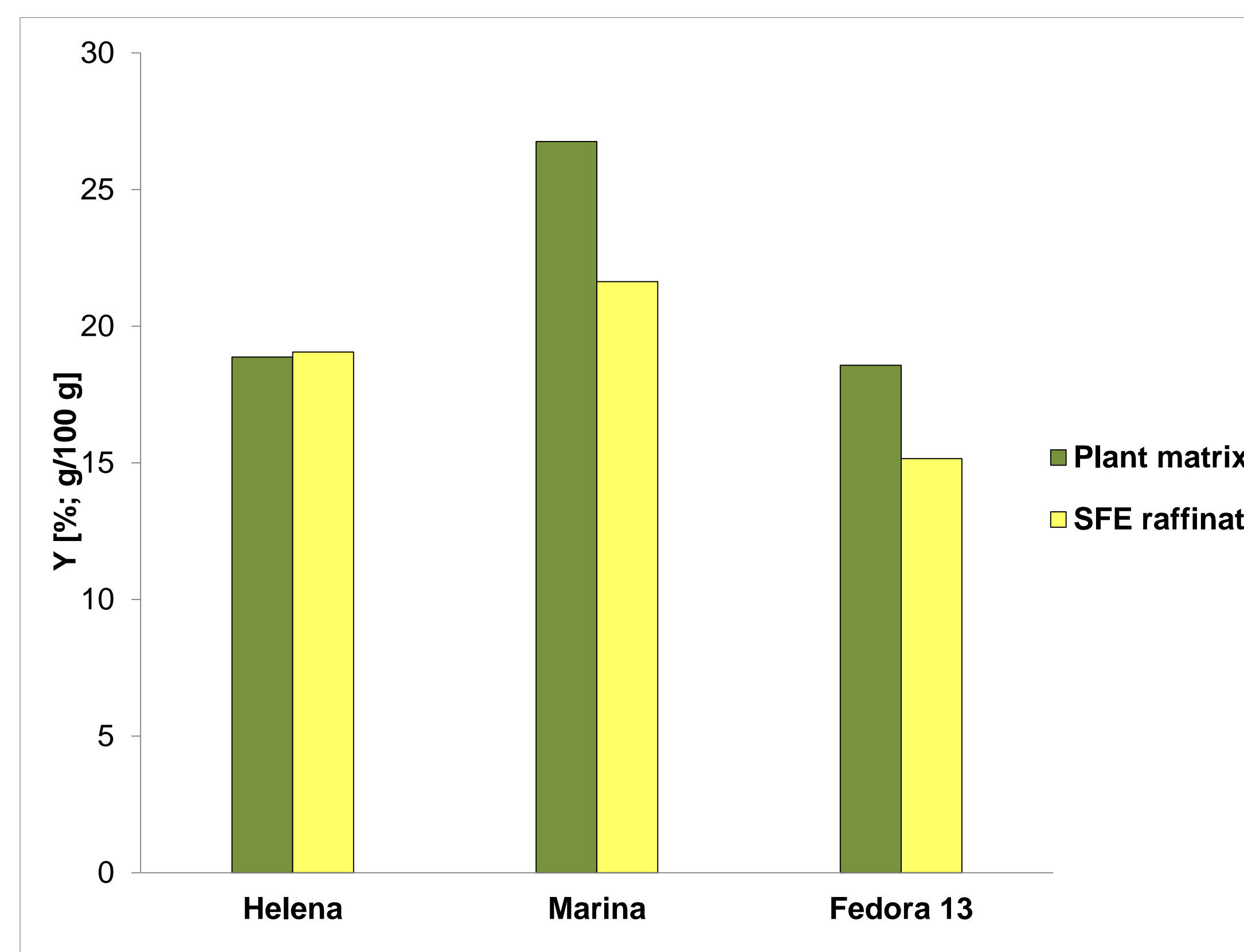
The yield of essential oil by HD and MWHD



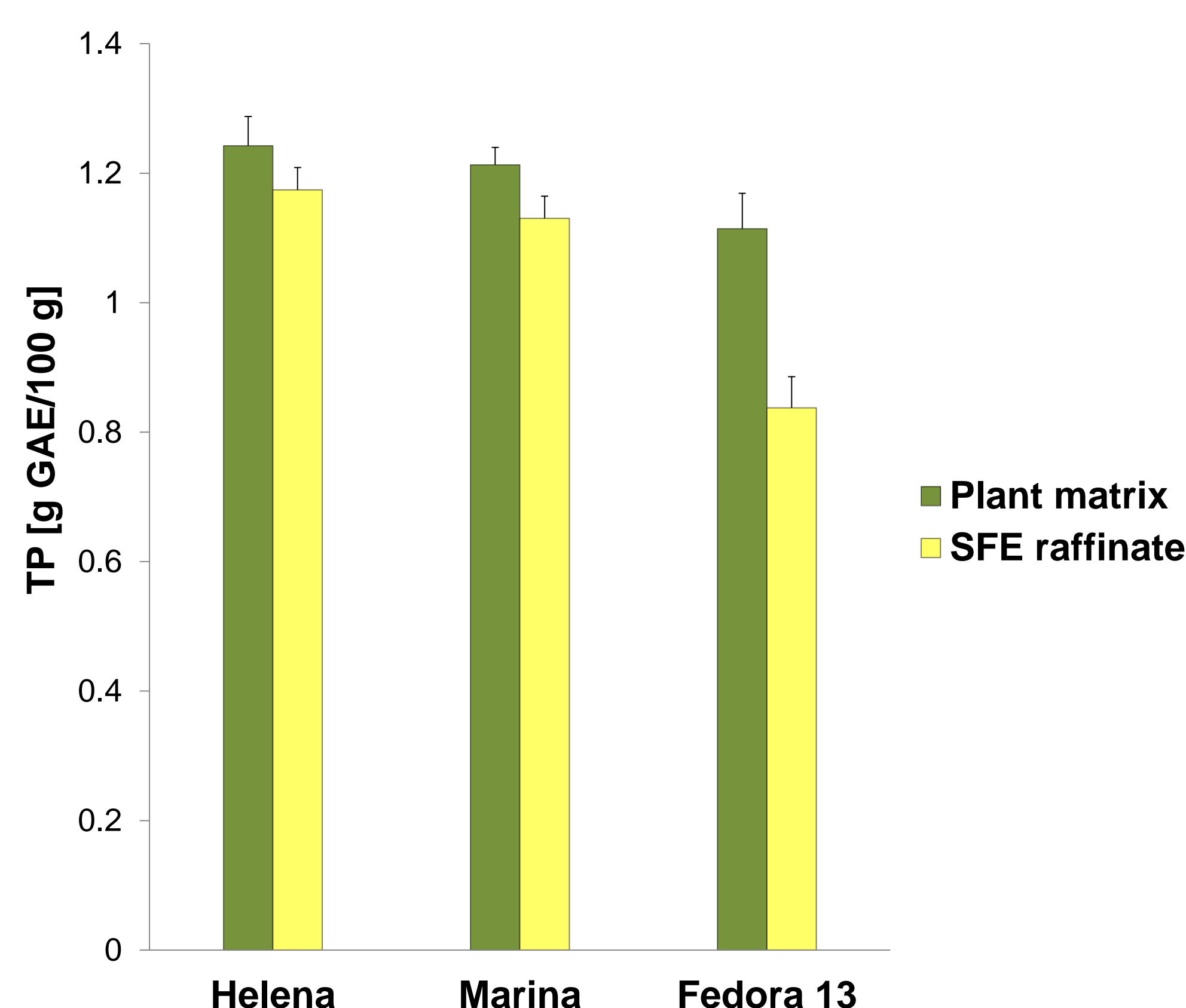
Kinetics of SFE from three varieties of hemp



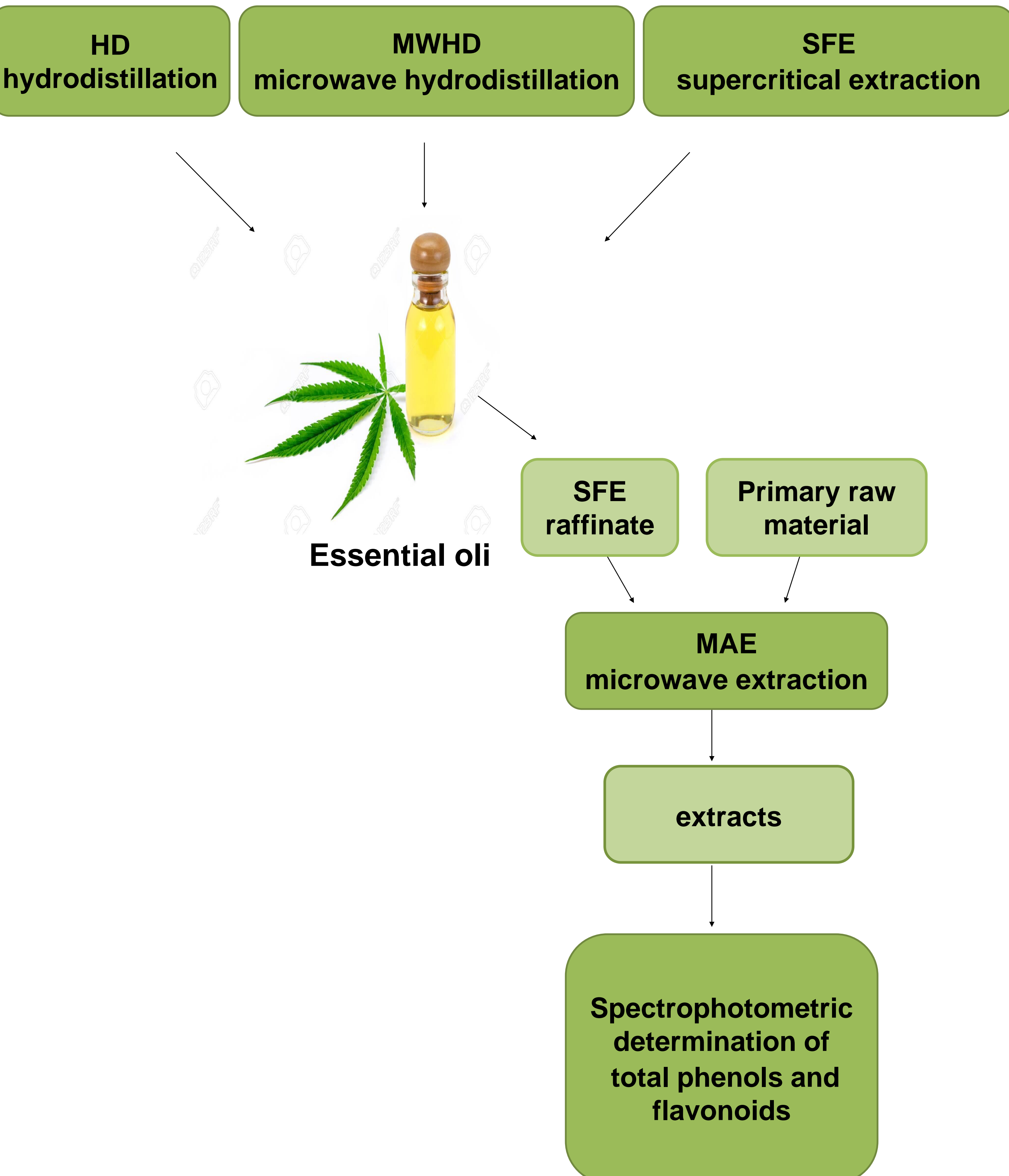
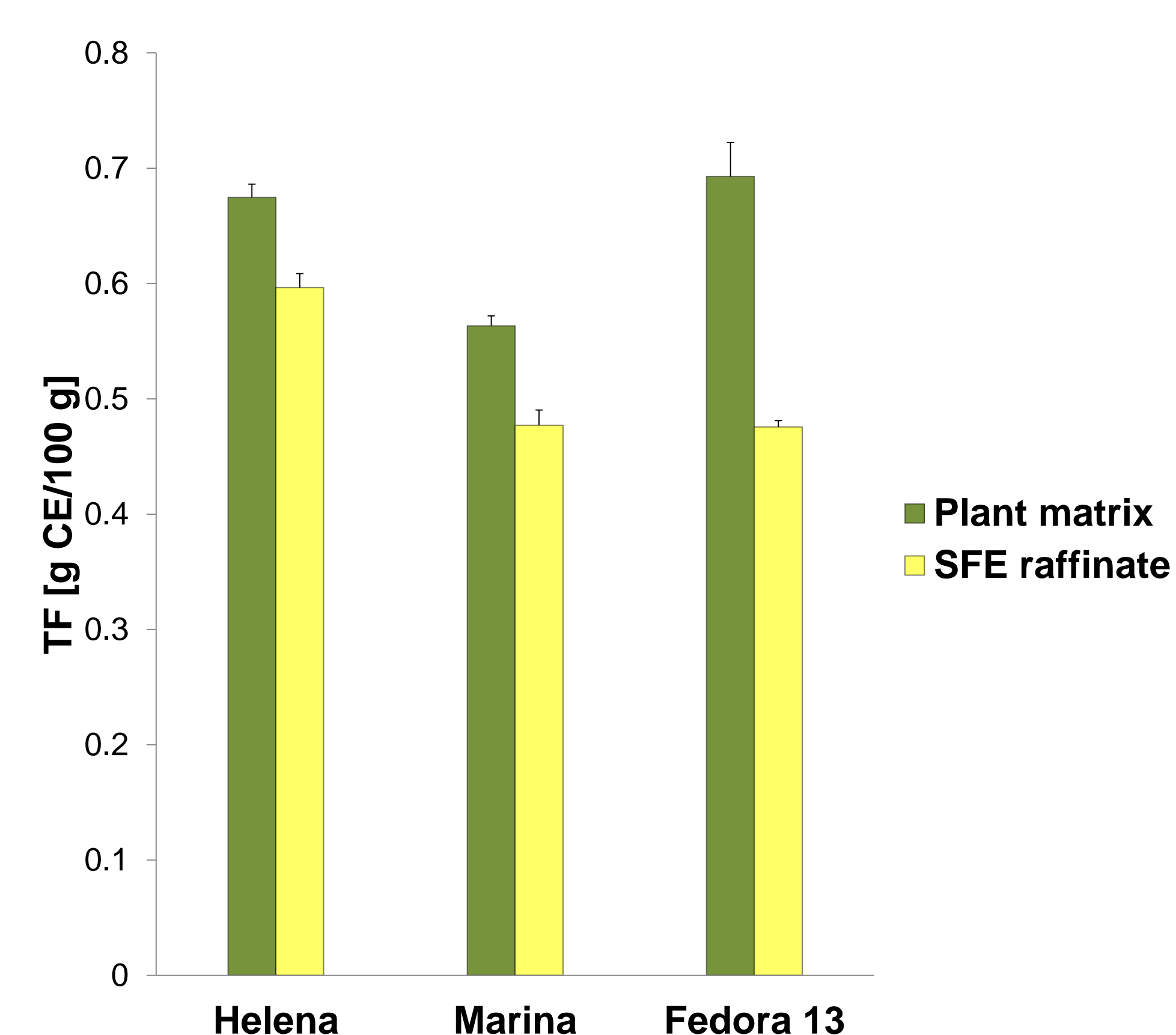
Yield of extraction from primary raw material and SFE raffinate by MAE



Yield of total phenols expressed in g GAE / 100 g



Yield of total flavonoids expressed in g CE / 100 g



## Conclusion

Supercritical extraction has proven to be the best technique for obtaining essential oil from *Cannabis sativa* L. The high content of phenols and flavonoids obtained from SFE raffinates indicate that the by-products of supercritical extraction are a good material for isolation bioactive compounds. Thanks to the extraction of bioactive molecules, the hemp could be an important plant material in the pharmaceutical and food industries for creating potential new products.